

CLAIMS

What is claimed is:

1. In a wire bonding apparatus for bonding a wire to a bond pad located on a semiconductor chip and a lead finger of a lead frame of a plurality of lead frames being supplied to said wire bonding apparatus in a strip form, said apparatus comprising:
a wire bonding apparatus having a portion thereof for dispensing of said wire to be bonded to said bond pad and said lead finger and bonding said wire to said bond pad or said lead finger;
an independent clamp for engaging another portion of said lead finger before said bonding of said wire thereto, said independent clamp being independently movable in relation to movement of another portion of said bonding apparatus and said lead finger of said lead frame for engaging a portion of said lead finger; and
a conventional fixed clamp for engaging a portion of said lead finger adjacent said independent clamp.
2. The apparatus of claim 1, wherein said independent clamp is located between said bonding apparatus and said conventional fixed clamp engaging said portion of said lead finger during said bonding of said wire thereto.
3. The apparatus of claim 1, wherein said independent clamp includes having an ability to move independently in an x-axis, y-axis and z-axis.
4. The apparatus of claim 1, wherein said independent clamp is movable independently in any direction of a movement of said bonding apparatus.
5. The apparatus of claim 1, wherein said apparatus further comprises:
heating apparatus located beneath said semiconductor chip.

6. The apparatus of claim 1, wherein said apparatus further comprises:
heating apparatus located beneath said lead finger.
7. The apparatus of claim 6, wherein said semiconductor chip is heated before said wire is bonded thereto.
8. The apparatus of claim 1, wherein said independent clamp is resiliently mounted.
9. The apparatus of claim 8, wherein said independent clamp is resiliently mounted through use of a spring engaging a portion of said independent clamp.
10. The apparatus of claim 1, wherein said independent clamp has an end portion thereof which is insulated.
11. The apparatus of claim 1, wherein said independent clamp has an end portion thereof which is semicircular in shape.
12. The apparatus of claim 1, wherein said independent clamp has an end portion thereof which is arcuate in shape.
13. The apparatus of claim 1, wherein said independent clamp has an end portion thereof which is articulated for movement.
14. The apparatus of claim 1, wherein said independent clamp is located between said bonding apparatus and said conventional fixed clamp engaging said portion of said lead finger during said bonding of said wire thereto.

15. A wire bonding apparatus for bonding a wire to a bond pad located on a semiconductor chip and a lead finger of a lead frame of a plurality of lead frames supplied to said wire bonding apparatus in a strip form, said apparatus comprising:
wire bonding apparatus having a portion thereof for dispensing of said wire to be bonded to said bond pad and said lead finger and bonding said wire to said bond pad or said lead finger;
a conventional fixed clamp for engaging a portion of said lead finger; and
an independent clamp for engaging another portion of said lead finger before said bonding of said wire thereto, said independent clamp having an ability to move as desired in an x-axis direction, a y-axis direction, and a z-axis direction concurrently regarding a portion of said lead finger and being independently movable in relation to movement of another portion of said bonding apparatus.

16. The apparatus of claim 15, wherein said independent clamp is movable independent of a movement of said bonding apparatus.

17. The apparatus of claim 15, wherein said apparatus further comprises:
heating apparatus located beneath said semiconductor chip.

18. The apparatus of claim 17, wherein said apparatus further comprises:
heating apparatus located beneath said lead finger.

19. The apparatus of claim 17, wherein said semiconductor chip is heated before said wire is bonded thereto.

20. The apparatus of claim 15, wherein said independent clamp is resiliently mounted.